Special Issue

Forming and Deformation Behavior of Magnesium Alloys

Message from the Guest Editor

This Special Issue, "Forming and Deformation Behavior of Magnesium Alloys", focuses on the latest advancements and challenges in the field of plastic processing and deformation mechanisms of magnesium alloys. This Special Issue systematically investigates (1) microscale deformation mechanisms (e.g., slip, twinning, dynamic recrystallization), (2) optimization strategies for thermomechanical processing techniques (such as extrusion, rolling, and forging), and (3) innovative approaches including alloy design, texture control, and strength/toughness optimization. Interdisciplinary research will be emphasized, covering multiscale characterization (from atomic-scale simulations to macro-mechanical testing), performance evolution under extreme conditions, and predictive models of forming processes. Contributions addressing engineering-oriented studies—such as the correlation between processing parameters, microstructure, and properties, defect mitigation in forming, and corrosion–deformation interactions—are particularly encouraged.

Guest Editor

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Message from the Editorial Board

Metallic materials play a vital role in the economic life of modern societies; contributions are sought on fresh developments that enhance our understanding of the fundamental aspects related to the relationships between processing, properties and microstructure – disciplines in the metallurgical field ranging from processing, mechanical behavior, phase transitions and microstructural evolution, nanostructures, as well as unique metallic properties – inspire general and scholarly interest among the scientific community.

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